

**Rural Water Program****(JA-0113)****EXECUTIVE SUMMARY**

<b>Borrower:</b>	Government of Jamaica (GoJ).	
<b>Guarantor:</b>	Government of Jamaica (GoJ).	
<b>Executing Agency:</b>	Ministry of Water and Housing.	
<b>Amount and Source:</b>	IDB: (OC)	US\$10.0 million
	Local:	US\$ 2.5 million
	Total:	US\$12.5 million
<b>Financial Terms and Conditions:</b>	Amortization Period:	25 years
	Grace Period:	5 years
	Disbursement Period:	5 years
	Interest Rate:	Variable
	Supervision and Inspection:	1%
	Credit Fee:	0.75%
	Currency:	Single Currency Facility
<b>Objectives:</b>	To improve the sanitary and health conditions of rural areas in Jamaica by increasing coverage of potable water and sanitation services in poor areas defined as such in the Jamaica Poverty Map (JPM).	
<b>Description:</b>	The Program consists of financing the extension of potable water and basic sanitation systems to poor communities that lack such services. To ensure their sustainability, the Program is based on community participation principles and encouraging private sector participation in the construction, operation and maintenance of the systems. It is anticipated that the Program will bring water services to over 25,000 inhabitants. The Program also contemplates a strengthening component of the Ministry of Water and Housing (MOWH) in order to accelerate present and future increases in the coverage of rural water in the country.	

**Bank's Country and Sector Strategy:**

The Country Paper for Jamaica (GN-2025) defines two overriding objectives. The first is to support the establishment of a satisfactory macroeconomic environment, and the second, to support a process of structural adjustment and reform aimed at promoting an improved environment for long-term private sector led growth and development. The Bank will seek to attain these objectives by concentrating its activities in five priority areas: (i) financial sector restructuring and reform; (ii) private sector development; (iii) public sector modernization; (iv) social development; and (v) environmental management.

The proposed Program will contribute to the implementation of the strategy because it has a direct impact on the social development component, since it aims at improving the sanitary conditions of at least 25,000 inhabitants in poor rural areas of the country. It also contributes to the private sector development component of the strategy because it seeks to create a partnership between the communities, the private sector and the GoJ in the construction, operation and maintenance of the water systems.

**Environmental/Social Review:**

Given the type of works included in the Program, the potential negative environmental impacts can generally be expected to be small in magnitude, localized, and confined mainly to the construction phase. To address these impacts, relatively simple and easily applied mitigation measures are available. These include careful planning and supervision of the works, which are contemplated in the Operating Regulations (OR) of the Program.

**Benefits:**

The Program is expected to have a positive impact, since increased access to potable water and sewerage services will improve the health and the quality of life of the beneficiary population. In particular, the Program will benefit the country's poorest populations, which are distributed across a wide geographic area. Other groups that are expected to benefit from the Program are women and children, who are generally responsible for transporting water and caring for the health of their families. The Program will promote the active involvement of woman in Program activities, especially, their participation in the Community Water Organizations (CWO).

**Risks:**

- (i) **Risk:** The Ministry of Water and Housing's (MOWH) capacity to channel Program's funds to the CWO. **Mitigation:** MOWH will receive support from private firms that will assist the Project Implementation Unit

(PIU) and an institutional component to strengthen the MOWH is included.

- (ii) **Risk:** Sustainability of the systems after they are constructed and turned over to the CWO. **Mitigation:** Community participation and the rates to be applied by the CWO will be sufficient to cover all the operation and maintenance costs of the services. The Office of Utilities Regulation (OUR) will authorize tariffs for each community.
- (iii) **Risk:** Lack of adequate interest from local entrepreneurs in the Build-Operate contracts. **Mitigation:** The Project Implementation Unit (PIU) will promote the Program among the private sector and will carry out a financial feasibility analysis before the call for bids, guaranteeing an adequate rate of return.
- (iv) **Risk:** Community capacity to sustain the operation of water supply systems given the lack of demonstrated success in this area. **Mitigation:** the Program considers a component of community development and assistance to the MOWH in Community Development training.

**Special Contractual  
Clauses:**

**Prior to first disbursement:**

- (i) Contracting of the PIU Program Director and a plan to hire the other members of the PIU (see paragraph 3.1).
- (ii) The final text of the Program's Operating Regulations has been presented to and approved by the Bank (see paragraph 3.2).

**Prior to disbursement for works:**

- (iii) Signature of the contracts with Program firms (see paragraph 3.9).
- (iv) Signature of the Memorandum of Understanding between the Community Water Organizations (CWO) and the MOWH (see paragraph 3.11).

**Others:**

- (v) Any changes in the Program's Operating Regulations shall require previous agreement between the parties (see paragraph 3.2).

<b>Poverty-Targeting and Social Equity Classification:</b>	This operation qualifies as a social equity-enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore, this operation qualifies as a Poverty Targeted Investment (PTI) (see paragraph 5.12). The borrowing country will be using the 10 percentage points in additional financing (see paragraph 2.15).
<b>Exceptions to Bank Policy:</b>	No.
<b>Procurement:</b>	International competitive bidding will be required for procurements valued at US\$250,000 in the case of goods, US\$1,500,000 in the case of construction works, and US\$200,000 in the case of consulting services. Bidding for items valued under these amounts will be carried out in accordance with national legislation, which is compatible with Bank's procedures.

## **I. FRAME OF REFERENCE**

### **A. Socioeconomic framework**

- 1.1 Jamaica's total population is estimated at 2.56 million inhabitants (1999), with an average growth of 0.9% per year during the 1990's. The percentage of the population under age 15 decreased to 31% of the total, while those over age 65 reached 7%. The urban population has been on the rise, growing from 55.7% in 1990 to 64.4% in 1999, mainly due to increasing migrations from agricultural areas to urban centers of the island.
- 1.2 The country's social development indicators have evolved modestly over the last decade. Infant mortality, which was 25 per 1,000 live births in 1990, had declined to 21 per 1,000 in 1998. The pit death rate has also been declining, reaching 6 deaths per 1,000 population in 1998. During that same year, life expectancy at birth was 75 years; up from 73 years in 1990. By the close of the 1990s, the illiteracy rate for the population under age 15 was approximately 14%.
- 1.3 As for the economic situation, the country grew by 1% in 2000, following low growth in the early 1990's and an economic contraction in the late 1990's that resulted in steady erosion of per capita income over the decade. Among the factors accounting for the growth experienced in 2000 were strong growth in services, including 6% growth in tourism, and moderate growth of manufactures. The financial services sector, which experienced a crisis in the late 1990's, also showed some growth in 2000 after the introduction of rehabilitative measures with support from the IDB and other multilateral agencies.
- 1.4 The GoJ faces the challenges of consolidating its macroeconomic stability gains, reducing the debt burden and promoting sustained economic growth. The GoJ continues to place priority on containing inflation that it succeeded in reducing from 80% in the early 1990's to 6% in 2000. In addition, the Central Government registered a fiscal deficit of 1% in 2000/01, down from 7% in 1998/99, but further contraction will have to be achieved in the overall public sector deficit that was reduced from 11% in 1998/99 to 5% in 2000/01. Another important priority is to reduce interest rates in order to stimulate economic growth, and interest rates have been trending downward over the last year. However, interest rates are still at high levels, which present an obstacle to investment and growth. Interest rate reduction will also help to curb the debt service that absorbs more than half of government revenue at present so that more resources can be devoted to the social sphere where action is needed to alleviate rural poverty and improve equity. This operation will address mainly these latter challenges.

## **B. The potable water and sanitation sector in Jamaica**

### **1. Coverage of potable water and sanitation services**

#### **a) Urban areas**

- 1.5 According to the Survey of Living Conditions (1998), 65.1% of the Jamaican population has access to water via residential connection, 12.6% via a nearby source, and 22.3% has no service. Wastewater exists in most urban areas, with coverage of 92% in the Kingston Metropolitan Area (KMA), and 60% in other towns. Important differences exist between the urban and rural areas in both access to and quality of service. While families have the best access to water in the capital city of Kingston and other urban areas, in rural areas the situation is much worse. Practically the entire population of Kingston (97.2%) has access to water via residential connection, while the corresponding figure is only 38% in rural areas.
- 1.6 In terms of quality the situation is rather homogeneous between rural and urban areas, but precarious. More than one-third of the population has services considered inadequate for reasons such as the quality of water provided, regularity of available water, or access to it. Treatment of wastewater on the island is limited and is basically an urban amenity. The average Jamaican household spends 2.1% of its income on water and sewage services, while the poorest quintile spends 4%. In addition, some communities have access to "social" water, which is supplied through standpipes or by emergency trucking and is currently 100% subsidized.

#### **b) Rural areas**

- 1.7 Jamaica's rural population is approximately 1.3 million, half of the country's population<sup>1</sup>. In 1999, 36% of rural households had water toilets and a total of 99% of the poorest (urban or rural) households had access to pit latrines or water closets. The problem of inadequate water service coincides with the prevalence of population living under poverty conditions in the island's rural areas. Demand for water in rural areas is attended through: (i) domestic yard or house connections (38%); (ii) standpipes (26%); (iii) rainwater collection tanks (22%); and (iv) other systems (14%). Approximately 13% of rural households have to walk more than 1,000 yards (900 m.) to get water and an additional 8% rely on surface water with no treatment. Severe droughts have aggravated this precarious supply in the last years.
- 1.8 The GoJ estimates that almost half of the rural population receives inadequate water services. Presently, rural communities depend upon a mixture of rainwater catchments, protected and unprotected springs, piped water to standpipes and house connections. They also depend upon unsafe water such as river water, irrigation water and run off.

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<sup>1</sup> The population census defines as rural, all areas outside the Kingston Metropolitan Area, Parish capitals and major towns.

- 1.9 Responsibility for water provision in the rural areas has been evolving over the years, the National Water Commission (NWC) being accountable for it at times and at others the Parish Councils. Today NWC serves about 80% of the total population; Parish Councils serve 12% of the rural population by means of low technology schemes; and a few private schemes serve a minimum part of the country (mainly housing developments, tourist facilities and the bauxite industry). Neither the NWC nor the Parish Councils have managed to address the challenge of rural water successfully. At present, the Parish Councils administer small systems that in most cases do not provide piped water.
- 1.10 The GoJ has made several efforts to address rural water issues. Through the Local Government Reform Program initiated in 1993, Jamaica restored a number of functions and powers to the Parish Councils, including responsibility for 964 micro-water systems (runoff catchment basins, springs and tanks) which generally serve small and scattered rural communities (up to 500 of the population). Also under the Parish Infrastructure Development Program (PIDP) –which the Bank partially finances- micro-water systems with 100% subsidy to investment and operations and maintenance are also being constructed.
- 1.11 In the decade of the 1990's the problems in the water sector began to come to light more severely. In 1997 widespread dissatisfaction with water services was apparent with some cases of civil unrest that was exacerbated by a severe drought throughout the country. As a result, the GoJ adopted a series of initiatives to solve them, mainly: (i) a reorganization of the water sector institutions; (ii) new investments in water systems; (iii) the definition and issuance of a water sector policy and strategy, with Bank's support; and (iv) the establishment of emergency programs such as the "Rapid Response Programme" which was established by the MOWH as a short and medium term solution to some of the water problems, especially in the rural areas.

## **2. Legal, institutional and financial aspects of the sector**

### **a) The institutional setting**

- 1.12 To address water sector problems the GoJ has made important efforts in the last years, mainly in: (i) the reorganization of the water sector institutions; (ii) new investments in water systems; and (iii) the definition and issuance of a water sector policy and strategy. In order to rationalize the water and sanitation institutional structure; the GoJ made an important step separating the roles of policy formulator, regulator and entrepreneur. The former Ministry of Public Utilities was separated into sector ministries. As a result, the MOWH was created as the main entity responsible for water policy formulation. The Ministry of Health (MH) continued being responsible for water quality control and the Office of Utilities Regulation (OUR) was established under the Ministry of Industry (MI), in charge of regulating energy, road transport, communications and the Water and Sanitation Sectors (W&SS). The NWC -a public organization- remained as the main agency for water and sanitation provision in 80% of the

country. Parallel to NWC a number of operators coexist which include the Urban Development Corporation (UDC), parishes and few private operators.

**C. The regulatory framework and the Government's sector policy**

- 1.13 The Bank, through technical cooperation, assisted the GoJ in its efforts to establish the OUR. The OUR was created in 1995 as an autonomous legally recognized entity under the executive branch of the Government. The OUR's functions are: (i) licensing of services; (ii) regulation of services; (iii) supervision of the level of quality and efficiency of those services; (iv) protection of the interests of the community; and (v) verification of the correct application of the relevant legal provisions as well as approval of tariffs for any suppliers.
- 1.14 Complementary to the sector reform, in the late 1999's the GoJ approved in Cabinet a Water Sector Policy to enable the provision of adequate water and sewerage services. The main elements of the policy are: (i) to reorganize the water institutions; (ii) to ensure the availability of a minimum quantity of services in a cost-effective manner; (iii) to ensure minimum standards of service to the population; (iv) to ensure the efficient provision and use of water; (v) to mobilize additional sources of funding; (vi) to introduce cost recovery mechanisms; and (vii) to ensure the effective and efficient operation of an appropriate regulatory framework to protect customers, investors and the environment. The Cabinet approved the Water Sector Policy in March 1999 and with the help of consultancies funded by the IDB, began work on the development of a Strategy and Action Plan, completed in November of 2000 which was published for public consultation in June of 2001.

**D. The Bank's country strategy**

- 1.15 The Country Paper for Jamaica (GN-2025) defines two overriding objectives. The first objective is to support the establishment of a satisfactory macroeconomic environment, and the second, to support a process of structural adjustment and reform aimed at promoting an improved environment for long-term private sector led growth and development. The Bank will seek to attain these objectives by concentrating its activities in five priority areas: (i) financial sector restructuring and reform; (ii) private sector development; (iii) public sector modernization; (iv) social development; and (v) environmental management.
- 1.16 The Program will contribute to the implementation of the strategy because it has a direct impact on the social development component, by improving the quality of life and the sanitary conditions of at least 25,000 inhabitants in poor rural areas of the country. It also will contribute to the private sector development component of the strategy because it seeks to create a partnership between the communities, the GoJ and the private sector in the construction, operation and maintenance of the water systems.



## **E. Actions by the Bank and other donors in the sector in Jamaica**

### **1. The Bank's actions**

- 1.17 The Bank's direct involvement in Jamaica's water sector includes three lending operations totalling US\$22.8 million approved in the years 1975 and 1978<sup>2</sup>. Since 1990, the Bank has focused its efforts on establishing a policy and regulatory framework for the sector. Currently, there are two operations that finance the water sector in a minor scale: (i) the Jamaica Social Investment Fund (Loan 1005/OC-JA) which has a component to finance small sanitary infrastructure (less than 500 beneficiaries) associated to the provision of social services and public sanitary convenience; and (ii) the Parish Infrastructure Development Program (Loan 1197/OC-JA) in 1999, for US\$50 million (IDB contribution of US\$35 million), which earmarks US\$2 million to rehabilitate a number of micro-water systems (out of the scope of the present Program).
- 1.18 In addition, three technical cooperations have been approved. The first one to develop the legislation and regulatory instruments to empower the OUR to act as the main regulatory agency for energy, telecommunications, transportation and water supply. This operation also helped to develop the water sector policy by producing a detailed sector strategy and action plan. The objective of the second operation was to support the NWC in testing alternatives for private sector provision of potable water and sanitation services in three pilot cases. Due to bilateral negotiations between the GoJ and private consortia to finance a major urban investment program, the GoJ requested the Multilateral Investment Fund (MIF) to cancel this cooperation. The third TC financed the Water Resources Strategy and Action Plan.

### **2. Actions by other donors**

- 1.19 An active source of funding for the water sector in rural areas of the island is the European Union (EU). In urban areas the major actors have been the Japan Bank for International Cooperation (JBIC); the Caribbean Development Bank (CDB); and the United States Agency for International Development (USAID). The EU provided €\$6.7 million in grant resources to establish four water supply and treatment plants in rural Jamaica (project completed in 1999), and has recently approved an additional €\$10 million for another four supply systems also in rural areas. The Bank is actively co-ordinating its activities with these agencies. As a result, it is expected that JBIC will co-finance the Kingston Water and Sanitation Project currently under preparation with Bank support. The United Nations Development Program (UNDP) is financing institutional support to OUR to develop industry-specific regulation for the W&SS.

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<sup>2</sup> These operations were disbursed with significant delays, and the main identified problem was the lack of a reliable water source.

### **3. Coordination between the Bank and other donors**

- 1.20 The Bank is actively co-coordinating its activities with other agencies financing the water sector. As a result, it is expected that JBIC will co finance the Kingston Water and Sanitation Project (JA-0114) currently under preparation with Bank support.

#### **F. Conceptualization of the Program**

- 1.21 To address the poor provision of W&SS in rural areas, the GoJ –with a Bank’s Technical Cooperation, -”Design of a Rural Water Program” (ATN/DC-7079-JA)- prepared the Rural Water Program following the new Water and Sanitation Policy and the lessons learned from previous experiences and Programs. Conclusions obtained during Program preparation demonstrate that the main rural problems originate from –among other factors—the following issues:
- a. The institutional treatment of the rural sector in the country has had an urban bias (a “utility approach”) by the NWC. NWC’s organizational nature specializes in major urban conglomerates and rural water schemes tend to benefit less from investments in water infrastructure compared to urban areas due to sparse population, difficult topography and lack of proximity to sources.
  - b. The “utility approach”, which privileges the extension of networks to rural water results in big works and high capital costs, generating a technological bias to the detriment of adequate smaller more appropriate technology.
  - c. Institutional bias, originated from the “utility approach”, disregarding more appropriate institutional alternatives for small communities such as community participation or private sector involvement when dealing with the design, construction, operation and maintenance of the systems as an option to provide sustainable services
  - d. As an alternative to the NWC, the GoJ has tried to delegate this responsibility to the Parish Councils, however it has been demonstrated that these local organizations are weak and in most cases not prepared to handle the responsibility of providing the services.
- 1.22 As part of the national water policy, the GoJ has defined as the main objective to ensure access to safe water and appropriate sanitation to the rural population by the year 2005. The strategy to reach this objective comprises the following elements: upgrading minor systems, increasing the efficiency of operations, and mobilizing additional sources to the sector. The policy: (i) sets up community participation in the operation and management of smaller water and sanitation systems as the main vehicle for service improvement; (ii) defines that the tariff policy for urban and rural areas will be the same, however allowing subsidies to the poor; and (iii) encourages private sector participation.

- 1.23 Currently, the tariff structure for rural systems operated by NWC is the same as that used for urban systems. For residential consumers the service charge is US\$2.26 and the rates are US\$0.28 per m<sup>3</sup> for the first 14 m<sup>3</sup> of monthly consumption and US\$0.5 to US\$1.1 from 15 to 91 m<sup>3</sup>. A commercial and industrial rate is homogeneous and is US\$1.06 per m<sup>3</sup>. The sewerage rates are equal to water rates and are intended to cover the collection and treatment systems where available. Residential tariffs up to 14 m<sup>3</sup> are intended to cover operation and maintenance cost and the rest rates to cover investment costs. Analysing financial statements data, and taking into account that households that will benefit from the program will consume less than 15 m<sup>3</sup> per month, residential charges and tariff up to 14 m<sup>3</sup> consumption per month cover operational and maintenance of produced water (US\$0.35/m<sup>3</sup>).
- 1.24 Rural Communities in Jamaica are larger and more concentrated in population than the traditional rural communities of Central American or South American countries. Accordingly, following the national policy, the MOWH has changed its strategy in the water sector at the rural level. The Rural Water Program is the result of this change in strategy and is based on the following innovative elements:
- a. It gives rural communities a proactive role in the conception, construction and administration of projects.
  - b. Instead of providing funds to NWC to build new systems, it defines and targets subsidies to poor rural population according to explicit and transparent rules. To be eligible, communities must participate in the conception, operation and maintenance of the project.
  - c. It leaves the institutional definition to a dialogue between the communities and the MOWH, with the expectation of financing schemes according to the local conditions and community needs.
  - d. It allows private sector involvement in the systems' construction, operation and maintenance under the "builder-operator" contract concept.
  - e. It finances systems that are economically efficient as well as financially, environmentally, and technically viable.
  - f. It gives communities the possibility to own, as well as operate and maintain the systems.

## **II. THE PROGRAM**

### **A. Objectives**

- 2.1 The general objective of the Rural Water Program is to improve the sanitary and health conditions by increasing coverage of potable water and sanitation services in poor rural areas —defined as such in the JPM issued by the Planning Institute of Jamaica (PIOJ).
- 2.2 The purpose of the Program is to reduce waterborne diseases in rural communities of Jamaica, based on the community participation principle. The Program has the following characteristics: (i) develop and implement a community-based approach to conceptualize, co-finance, administer, operate and maintain water services in rural Jamaica; (ii) support autonomous, legally constituted, community-based water organizations (CWO) created to provide these services; (iii) allow the private sector to get involved in the construction and future operation and maintenance of the systems; (iv) extend the coverage of potable water and basic sanitation systems to small communities that lack such services and ensure their sustainability; (v) strengthen the main institutions -the MOWH- responsible for developing the policies for the expansion and administration of services in order to accelerate their coverage in rural areas; and (vi) generate a “demonstration effect” to implement the Program’s philosophy in other areas of rural Jamaica. It is expected that the Program will benefit approximately 25,000 inhabitants.

### **B. Project components (US\$1.40 million)**

- 2.3 To accomplish the objectives, the Program will comprise three main components: (i) construction of potable water systems; (ii) community and private sector participation; and (iii) institutional strengthening of the MOWH.

#### **1. Potable water projects (US\$7.65 million)**

- 2.4 The Program will finance the construction of water systems and individual sanitation schemes for single communities or groups of communities. This, the largest component of the Program, contemplates the costs of design, materials, construction, installation, supervision and commissioning of the systems. The average population of these communities is 4,000 inhabitants and the cost per capita for the systems would be around US\$400, which includes both a potable water system with house connections and individual solutions for the disposal of wastewater.

**2. Community and private sector participation (US\$1.72 million)**

**a) Community participation**

- 2.5 This component will finance all the necessary activities to advertise the Program, implement the CWO, and to assist them in the project contracting with third parties.

**b) Private sector participation**

- 2.6 The Program aims at encouraging private initiative to participate in the construction, operation and maintenance of the systems under the “Builder-Operator” contract concept. The beneficiary communities may choose to select a private firm to build the system and this same firm may remain responsible for its operation and maintenance for a period of at least 5 years. Accordingly, this component will finance the necessary activities to promote the private sector initiative and the design and implementation of the resulting contracts.

**3. Institutional strengthening of MOWH (US\$0.5 million)**

- 2.7 This component will seek to strengthen MOWH’s role as promoter of the expansion of potable water services in rural areas. In particular, it will provide support to assist MOWH in applying the philosophy of the Rural Water Program. Also in designing the institutional framework for the expansion and administration of services in order to accelerate present and future increases in the coverage of rural water in the country.

**C. Cost and financing (US\$1.22 million)**

- 2.8 The total cost of the Program has been estimated at US\$12.5 million. The Bank will finance 80% of the total, being the local counterpart 20%. The beneficiary communities will be financing 6% of the Program and the GoJ the remainder 14%. Community financing will be exclusively dedicated to the direct costs of the W&SS. Table 2.1 shows the distribution of this amount by source of financing and category of investment.

**TABLE 2.1**  
**BUDGET**  
**(in thousands of US\$)**

CATEGORIES	IDB/OC	LOCAL		TOTAL	%
		COMMUNITY	GOVERNMENT		
<b>Administration and Management</b>	<b>705</b>	<b>0</b>	<b>700</b>	<b>1,405</b>	<b>11.2</b>
Project Implementation Unit	405		400	805	6.4
Supervision	150		300	450	3.6
Auditing	150			150	1.2
<b>Direct Costs</b>	<b>8,145</b>	<b>765</b>	<b>960</b>	<b>9,870</b>	<b>79.0</b>
Potable Water Projects	6,885	765		7,650	61.2
Community and PSP Participation	860		860	1,720	13.8
Institutional Strengthening of MOWH	400		100	500	4.0
<b>Financing costs</b>	<b>1,150</b>	<b>0</b>	<b>75</b>	<b>1,225</b>	<b>9.8</b>
Interest	1,050			1,050	8.4
Credit fee			75	75	0.6
Inspection and supervision	100			100	0.8
<b>Total</b>	<b>10,000</b>	<b>765</b>	<b>1,735</b>	<b>12,500</b>	<b>100.0</b>
<b>%</b>	<b>80%</b>	<b>6%</b>	<b>14%</b>	<b>100%</b>	

**1. Administration and management**

**a) Project Implementation Unit**

- 2.9 Includes the operational costs of PIU and the cost of hiring the consultants (individuals and firms) necessary to carry out its functions during the four years of Program execution.

**b) Supervision**

- 2.10 This category includes the cost of the firms that will supervise the construction contracts and the "Build-Operate" (BO) contracts; they will report to the PIU.

**c) Auditing**

- 2.11 Includes the cost of hiring an independent auditing firm to audit the financial statements of the Program.

## **2. Direct costs**

### **a) Potable water and sanitation systems**

- 2.12 Construction of potable water systems and individual systems for wastewater disposal by contractor companies. The Bank will finance 90% of the direct cost of this component -US\$7.65 million- while the communities will finance 10%.

### **b) Community participation**

- 2.13 Direct costs for community participation will be divided as follows: (i) promotional activities to advertise the Program characteristics and requisites for participation; (ii) an educational Program in rural communities to promote rational and efficient water use; (iii) support for the formation of community water organizations legally established –cooperatives, friendly societies, companies or other legal organizational forms to develop and implement the Program-; (iv) assistance to the organized communities to prepare formal requests to be included in the Program and to request licenses from OUR; and (v) technical training for CWO's in the operation and maintenance of systems.

### **c) Private sector participation**

- 2.14 Direct costs for private sector participation will be divided as follows: (i) promotion of the initiative among private sector in Jamaica; (ii) project technical, legal and financial analysis to demonstrate private sector participation feasibility; (iii) preparation of terms of reference for contractors selection, and design of BO contracts; and (iv) design and implementation of supervision schemes for BO contracts.

### **d) Institutional strengthening of MOWH**

- 2.15 Direct costs for the institutional strengthening of MOWH will be divided as follows: (i) consultancy services to implement the Rural Water Program; (ii) training of MOWH officials in community development and private sector development, and the execution of the water policy; (iii) equipment for Program supervision at the MOWH; and (iv) design of a system for monitoring by MOWH of the evolution and performance of the community water organizations and its operation.

## **3. Financing costs**

- 2.16 This category, which accounts for 9.8% of the total Program costs of the Program, includes interest during the period of Program execution, the credit fee, and the cost of inspection and supervision of the Program by the Bank.

**D. Program financing**

- 2.17 As requested by the GoJ, the Bank will contribute 80% of the total cost of the Program, providing the equivalent of US\$10.0 million in Ordinary Capital (OC) resources, to be disbursed in various currencies according to Bank policy. The local contribution will be 20% of the total Program cost, equivalent to US\$2.5 million.
- 2.18 The loan would be subject to the following conditions: (i) variable interest rate; (ii) credit fee of 0.75% of undisbursed loan amounts; (iii) inspection and supervision costs equal to 1% of the total loan; (iv) disbursement period of 4 years; and (v) grace period of 5 years; and amortization period of 25 years.



### **III. PROGRAM EXECUTION**

#### **A. The Executing Agency and the Program Implementation Unit**

- 3.1 The MOWH will be the agency responsible for executing the Program. To ensure proper execution, -besides its own staff- the MOWH will create a Project Implementation Unit (PIU), which will consist of a Program Director, a Financial/Accounting Officer, a Technical/Environmental Officer, a Specialist in community development, and a Specialist in Management Information Systems (MIS), dedicated exclusively to the Program. As part of an ongoing agreement between the MOWH and Carib Engineering Ltd. (CECL)<sup>3</sup>, the PIU will use the services of CECL for preparing the designs and tenders of the Program. Nevertheless, CECL will not be financed with Program resources or with GoJ counterpart. In addition, the PIU will coordinate the activities of Private Consulting Firms (PCF) for promotional activities, community outreach and the definition of private sector participation. **Contracting of the PIU Program Director and presenting to the Bank the plan to select the rest of the personnel will be a condition prior to first disbursement.**

#### **B. Program execution and administration**

##### **1. Operating regulations**

- 3.2 The Program will be carried out in accordance with the Operating Regulations (OR), a preliminary version of which has been agreed with MOWH. These regulations will set out, inter alia: (i) eligibility conditions for communities to participate in the various components; (ii) eligibility conditions for projects; and (iii) the conditions for transfer of Program resources to beneficiary communities. **As a condition precedent to the first disbursement, the final text of the Program's Operating Regulations has to be presented to and approved by the Bank. Any changes in the Program's Operating Regulations shall require previous agreement between the Bank and the Ministry of Water and Housing.** The final version of the OR is expected to be completed and agreed upon with the MOWH before the end of 2001.

##### **2. Selection and eligibility criteria for communities and projects**

- 3.3 Eligible communities will be: (i) those defined as poor by the JPM (communities in the fourth quartile of the Poverty Map); (ii) those who have an established community organization; and (iii) communities of no more than 6,000 inhabitants and a maximum investment per connection of US\$1,600 (US\$400 per capita). The selection criteria will be -with the exception of the communities of the sample- "first-come first served". Eligible projects will be justified by PIU on the basis of the technical, economic, financial, institutional and environmental criteria established in the OR

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<sup>3</sup> A government owned consulting firm that prepared the designs for the sample projects.

- 3.4 A Steering Committee at MOWH will advise PIU for the communities' selection and projects approval. It will be chaired by the MOWH and will be integrated by the PIOJ, the Water Resources Authority (WRA), the National Environmental Planning Agency (NEPA), the Ministry of Local Government (MLG), and a Non-Governmental Organization (NGO) in community development.

### **3. Financing of systems and investment subsidies**

- 3.5 MOWH will contract for works only after signing a Memorandum of Understanding (MOU) with the community. The MOU will establish the form and amount of the community contribution, the acceptance of tariffs resulting from the selected projects to be charged for the service provision once the systems are operational, the obligation to create within a defined period of time a legally established community organization, according to the legal options available (see paragraph 2.2), and the obligation to choose among available options for operators.
- 3.6 The MOU will establish a commitment by the CWO to contribute 10% of the value of the work in cash, in kind or labor before construction begins. MOWH will make up the difference through a 90% investment subsidy. The subsidy will be provided as a non-reimbursable contribution at the time the construction contracts are signed with the contracting firms.

### **4. Private sector and NWC participation**

- 3.7 Participation by the private sector as well as the participation of the NWC are options for the community and are provided for in the OR. The analysis conducted during the preparation of the operation indicates that, in principle, the private sector is not interested in equity financing of water systems in communities targeted by the Program. However, the same analysis shows that it would be feasible to have private contractors building the systems and following construction, taking responsibility for the operation and maintenance of the systems under a contract arrangement.

### **5. The Builder-Operator (BO) Contract**

- 3.8 The Program contemplates the "Builder-Operator" contractual option that has been successfully implemented in other countries in the region, especially in small-scale projects as contemplated here. Operationally, once the community is selected to participate in the Program, and the basic scheme of the project is defined, the PIU will call for tenders not only for the construction of the systems but for the operation and maintenance of the systems once constructed. If in a particular case there are no bids for the BO contract, then a construction contract will be tendered and communities may decide to either operate the system by themselves or contract the services of the NWC. NWC's involvement under a contractual arrangement will only proceed when no tenders are presented by private firms.

- 3.9 Private sector entrepreneurs will be allowed to participate in the Program. In order to persuade private firms –constructors and consultants– to participate, the Program will promote the creation of consortia between constructors and other firms related to the operational expertise -mainly consultants, and NWC contractors– in order to bid for the BO contracts. Tenders will call to bid for construction and operation and it is expected that consortia or newly-created firms with the purpose of BO contracts will make proposals.
- 3.10 The Build-Operate contract (BO contract) is a combination between a construction and a management contract, by which the contractor assumes the responsibility for building the water system and upon completion of the works it remains responsible for operating it. It is expected that for the Program construction, consulting and operating companies will form consortia to bid for the contracts. The BO contract will be signed between the MOWH, the contractor and the beneficiary communities. Service provision will remain the contractor's responsibility with the beneficiary communities, who will own the systems. The contractor will assume the construction risk and commercial risk of the operation and will provide the MOWH and the CWO's a performance bond.
- 3.11 The contractor which will be responsible for service provision will be also responsible for requesting the licenses and the tariffs from the OUR. The revenues from the tariffs approved by OUR will pay for the operation, maintenance, depreciation costs, and the remuneration of the operator, in this sense the Contractor will act on behalf of the CWO.

**C. Project consulting firms**

- 3.12 The purpose of the project consulting firms will be to support PIU in carrying out the Program. To do so, it is estimated that three contracts will be signed to carry out the following activities: (i) promotional activities to generate awareness of the new Program and its rules; (ii) community outreach and strengthening, as well as conducting feasibility analysis for private sector involvement including the design of bids for BO contracts and its implementation; and (iii) assist with the implementation of the component of institutional strengthening for the future expansion of services. The financial administration and accounting for the Program will remain a responsibility of the PIU. Also the PIU will be responsible to guarantee that the projects comply with the specifications of the OR. The PCF's will work in coordination with MOWH so as to foster the transfer of technology, and its remuneration will have a variable, performance-based component. **Signing of contracts with project firms for promotion and community participation will be a condition precedent to the first disbursement for works' construction.**

**D. Project cycle and flow of funds for the Program**

3.13 The project cycle will have the following sequence:

- a. The PIU with the support of a PCF will promote the Program among potential beneficiary communities and explain the procedure to prepare a formal request to the PIU.
- b. Eligible communities will prepare and submit applications to the PIU.
- c. After screening and due diligence, the PIU –with the support of a PCF- will prepare and evaluate the preliminary plans for construction works that will be sent to CECL for preliminary design and feasibility analysis.
- d. Once the preliminary plans have been declared eligible by the Steering Committee, CECL will draw up the final designs and prepare the documentation for the bidding process. A PCF will assist the established community organization in signing MOU with the PIU.

3.14 PIU will tender for works only after signing a MOU with an established community organization. The MOU will set forth: (i) the form and amount of the community contribution; (ii) the projected tariffs to be charged for provision of service; (iii) the commitment to establish a legally CWO prior to awarding the BO contract (**signature of the Memorandum of Understanding between the CWO and MOWH will be a condition precedent to opening the bidding process for work's construction**); (iv) the calls for bids will follow either of two options depending on the selected operator the "builder-operator", or the community itself; (v) after the works have been awarded, the contractors will build the systems and perform the activities in support of the community for follow-through on the labor contribution and operation and maintenance of the systems; and (vi) once the systems have been built, and upon a contract signature MOWH will deliver them to the CWO or a third party which will be in charge of delivering the service.

3.15 As for the flow of Program funds, MOWH, in its capacity as Executing Agency, will administer the loan funds, through the PIU and the counterpart funds from the national budget with which it will pay the various suppliers of works and services. The resources received from the community -mainly labor, and materials- will be included in the bidding documents when calling for tenders.

3.16 The PIU will have the overall responsibility for implementing the Program with the support of the PCFs. Its responsibilities will be the following: (i) screening community applications according to the Operating Regulations; (ii) establish specific, separate bank accounts for the management of the loan and local counterpart funds; (iii) preparing and submitting disbursement requests to the Bank and the corresponding justification of expenses; (iv) maintaining adequate financial accounting and internal control systems for the management of the

Program's resources; (v) maintaining an adequate disbursements support documentation filing system, which must always be available for the Bank review and the Program's external auditors; (vi) preparing and submitting to the Bank the annual financial statements regarding the Program's expenses and the semiannual revolving fund status reports; and (vii) establish an effective record-keeping system for all the documentation submitted to justify eligible expenses under the Program. These records must always be available for review by the Bank and the Program's external auditors.

#### **E. Community involvement**

- 3.17 The beneficiary communities will be actively involved in the process of project conceptualization, planning, execution, operation, administration, and maintenance of the works in order to assure the Program's sustainability. To access the Program each community will organize a formal request to the PIU. With PIU support the selected communities will create a legally established organization (cooperative, friendly society or a limited liability company).
- 3.18 The studies on community organization conducted as part of the preparation phase showed the importance of women in the community assemblies held during the preparation of the sample. In all the cases women were actively involved in participating in the definition of the community necessities and providing leadership in the identification process of water needs. The relationship between women and natural resources, including water, is bound up with the use of these resources in their daily lives, and women's role as the administrators of resources in the domestic sphere is well recognized. Taking into account the active role of women in Jamaican rural areas, with a view to help the Program to promote equitable relationships between men and women in the communities and increasing the quality of human capital from the technical and social standpoints. The OR includes specific guidelines for keeping encouraging the active participation of the woman in communities' organizations.

#### **F. Systems' operation and maintenance**

- 3.19 As owner of the systems once built, each CWO will be responsible for operation and maintenance of the systems. To ensure proper operation and maintenance, the Program calls for the following measures: (i) participation by the community in construction, which will foster a sense of ownership of the facilities and responsibility for the service; (ii) allowing the communities to decide the participation of the private sector in the construction and the operation and maintenance of the systems under specific contractual arrangements -BO Contracts-; (iii) verification by MOWH -as a prerequisite for signing the financing agreements- that the rates to be charged will cover -as a minimum- the operation and maintenance costs (including short life assets' depreciation; and (iv) Training of the CWO by the construction firms, as part of the community development plan. In any case, PIU will assist communities to prepare a formal request of a License to provide the service -issued by OUR- and also the

preparation of a tariff, also for OUR's approval. During the Mid-term Review the Bank will make sure that these conditions are being complied with.

- 3.20 Being OUR the tariff authority in Jamaica, operators must submit to it any tariff request. In the case of this Program, beneficiary communities, with the assistance of PIU will prepare formal tariff requests to OUR. In the case of BO contracts, the contractors must submit the request to OUR. The tariff calculation will be made as part of the project cycle. This is calculated taking into account the following costs: operational, administrative, maintenance and depreciation of short life's assets (10 years). The tariff also includes a Price Adjustment Mechanism (PAM) for inflation, energy and devaluation. The process begins when preliminary schemes are prepared by PIU and discussed with each community. The final design decision is parallel to the tariff and the financial analysis. Once the system is built, a formal tariff resolution made by OUR will set the tariff who will check –among other issues- the systems' financial sustainability.

#### **G. Project preparation status**

- 3.21 This Program has been prepared on the basis of a technical cooperation financed by the Bank (ATN/DC-7079-JA). A sample of two projects were prepared by the MOWH within the agreement it has with CECL -rural communities of "Gravel Hill" and "White Horses-Pamphret"- which has a combined population of close to 8,770 and a cost of US\$2.6 million -these projects already have final designs-. This sample is equivalent to the 22% of the total cost of the Program and it will benefit to 35% of the potential beneficiaries. These communities were pre-selected by the MOWH<sup>4</sup> and the projects are feasible from the economic, financial, environmental and technical perspectives. Currently the MOWH is in the process of organizing the communities to sign the MOU to proceed with the preparation of the tenders.

#### **H. Environmental and social considerations**

- 3.22 The studies identified the direct and indirect impacts that the projects will generate in the physical, biological, and socioeconomic environments. This information was used to determine the magnitude and intensity of the environmental impacts, which are not expected to be significant, since most will be localized and temporary. Moreover, the proposed mitigation measures will be able to revert, attenuate, or mitigate any negative environmental effects, direct or indirect, that the Program might have on the natural and social environment in its areas of direct and indirect influence. The mitigation and compensation measures advocated are considered feasible economically, technically, and institutionally and, with the application of those measures, the socio-environmental balance of the Program is expected to be positive. The results of the studies also led to the formulation of measures for monitoring and control of compliance with the

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<sup>4</sup> Do not comply with the self-selection criteria ("first-come, first-served")

procedures designed to mitigate and offset the adverse effects of the projects and potentiate the positive impacts.

- 3.23 The PIU will have among its personnel an environmental specialist who will decide for each project to be financed by the Program if the negative impacts could be mitigated by complying with the control measures that will be part of the construction contract or if it is necessary to have a detailed environmental impact assessment. The PIU will also supervise the application of the mitigation measures.
- 3.24 The OR will include environmental control procedures and mitigation. Its cost will be included in the total cost of each project. Also the Operating Regulations will have an environmental annex in which it is specified that the tender documents will include procedures and standards used to control and mitigate negative impacts during the construction phase.
- 3.25 As for the Program's social impacts, the MOWH will play a role as the social link for local management. Its function is to administer the resources generated through the supply of water and sanitation services, ensuring that the benefits derived from the use of the systems are controlled by the community. The efficiency and effectiveness of the MOWH in this task will enhance their communities' quality of life, and as they develop they will be able to share administrative knowledge with smaller or newer CWO.
- 3.26 The recommendations made by the Committee on Environment and Social Impact - Technical Review Group (CESI/TRG) during the review of Profile II and the environmental summary on the project were explicitly dealt with in the OR, and the costs involved, where relevant, were determined and included. These recommendations are related to the following matters: (i) inclusion of the environmental feasibility analysis in the project cycle; (ii) existence of adequate wastewater disposal for the water projects; (iii) inclusion of an environmental specialist in the PIU. The project report -with all its annexes, including the Draft Operating Regulations- was reviewed by CESI/TRG at its meeting on June 29,2001.
- 3.27 As part of the environmental analysis of the Program, a plan for mitigation of environmental impacts during construction was developed, estimated to be 3% of the direct cost. This amount has been included in the Program costs. The guidelines for mitigation of environmental impacts are included in an annex to the OR for the Program. The specific actions arising out of these measures for each system to be financed under the Program will be included by in the final designs.

**I. Execution period and disbursement schedule**

- 3.28 The Program will be executed over a four-year period. The table 3.1 shows the expected disbursement schedule.

**TABLE 3.1**  
**DISBURSEMENT SCHEDULE**  
**(In thousands of US\$)**

YEAR	IDB	LOCAL	TOTAL	%
1	800	200	1,000	8.0
2	2,800	800	3,600	28.8
3	3,800	900	4,700	37.6
4	2,600	600	3,200	25.6
<b>TOTAL</b>	<b>10,000</b>	<b>2,500</b>	<b>12,500</b>	<b>100.0</b>
<b>%</b>	<b>80</b>	<b>20</b>	<b>100</b>	

**J. Revolving fund**

- 3.29 After all the conditions precedent to the first disbursement have been met, the Bank may advance funds from the financing for the establishment of a revolving fund of up to 5% of the total cost of the Program.

**K. Modality and schedule for bidding**

- 3.30 All bidding and contracting for goods, services, and works will be carried out by MOWH in accordance with the Bank's rules and procedures. International competitive bidding will be required for procurements valued at US\$250,000 in the case of goods, US\$1,500,000 in the case of construction works, and US\$200,000 in the case of consulting services. Bidding for items valued at under these amounts will be carried out in accordance with national legislation, which is compatible with the Bank's procedures.

**L. Program monitoring and supervision**

- 3.31 The Bank's Country Office in Jamaica (COF/CJA) will carry out Monitoring and supervision of Program execution. For that purpose, MOWH will submit to the Bank an initial report detailing the plan of work and timetable for execution of the Program. MOWH will also submit to the Bank semiannual progress reports, based on the indicators set out in the logical framework. The following section contains more detailed information on these indicators.
- 3.32 The reports to be drawn up by the COF/CJA on the status of the loan will include an account of any problems encountered during Program execution and the solutions implemented to address them. A summary of these matters will be included in the annual report on the Bank's portfolio in Jamaica.
- 3.33 In order to assure appropriate monitoring of the maintenance of the works, for a period of five years from the date of Program completion MOWH will submit to



the Bank annually, during the first quarter of the calendar year, an annual plan for operation and maintenance of the systems financed with Program resources, with specific information on each of the beneficiary communities, which should include a report on the management and maintenance activities during the previous year and the current condition of the systems.

**M. Performance indicators**

- 3.34 The progress of the Program will be evaluated on the basis of the indicators in the logical framework (see Annex I), the most important of which are shown below along with the targets to be achieved by the end of each year of the Program. During the Program start-up mission, in consultation with the Executing Agency, a second group of indicators may be established that will relate to more specific aspects of Program execution, such as monitoring of the community development efforts by the PCF.

**TABLE 3.2**  
**JAMAICA- RURAL WATER PROGRAM**  
**PERFORMANCE INDICATORS**

INDICATOR	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Beneficiaries of the construction of systems.	5,000	7,000	7,000	6,000
Build-Operator Contracts		2	2	2
Community water organization (CWO) created.	2	3	4	3

**N. Auditing**

- 3.35 The annual reports that MOWH will submit to the Bank, within 120 days following the close of the financial year, will include annual financial statements for the Program. An independent auditing firm previously accepted by the Bank will have audited these financial statements. The auditing costs will be financed with resources from the financing.

**O. Evaluation during execution**

- 3.36 A Mid-term evaluation with the participation of the project team and COF/CJA, will take place after completion of the second year of execution to verify the achievements of the Program. Additionally, the Bank will carry out annual meetings at the request of the COF/CJA in order to verify the Program performance.

**P. Ex-post evaluation**

- 3.37 The borrower was consulted on whether or not an ex-post evaluation was to be conducted. The GoJ indicated that it would decide at the end of the Program if it will conduct an Ex-post Evaluation. However, in order to facilitate the availability of data for an eventual evaluation of the efficiency and effectiveness of the Program in achieving the stated objectives and to utilize the lessons learned from the experience, the Executing Agency will submit to the Bank, a brief on each of the communities that benefited from the Program. This brief will be submitted on an annual basis after the final disbursement, for at least three years following the Program's completion and it will include the following information: (i) number of families in the community; (ii) description of the systems constructed and date on which the systems were turned over to the CWO; (iii) contribution and subsidy scheme for the construction of the systems; (iv) average family income; (v) rate calculation; (vi) average amount billed to each family, with an itemized breakdown of the bill; and (vii) statistics on the incidence of waterborne diseases and infant mortality rate before construction of the systems and at Program completion.

#### **IV. THE BORROWER AND THE EXECUTING AGENCY**

4.1 The borrower will be the GoJ and the Executing Agency will be MOWH.

##### **A. The Ministry of Water and Housing**

###### **1. Legal and institutional characteristics**

4.2 The Ministry of Water, created by Executive order in 1998 was given responsibility for planning water and sanitation services in the country. MOWH's has as main institutions associated with the water sector the National Water Commission (NWC), the Water Resources Authority (WRA), the National Irrigation Commission (NIC), and Carib Engineering Company Ltd., (CECL).

4.3 From a more operational point of view, MOWH carries out its allotted responsibilities through promotion of the participation of communities in the supply of services through the creation of CWO, with which it signs agreements for joint construction and financing of systems. After completion of the construction, MOWH turns over the systems to the CWO, which take responsibility for their operation and maintenance and for the supply of services.

4.4 The MOWH is a relatively young Ministry and has not executed Programs similar to the one proposed here. To compensate for this lack of prior experience, the MOWH will have the support of the PIU and the relevant PCF's implement the following activities contemplated under this Program in the rural sector: (i) promotion, (ii) planning projects, (iii) contracting of works, (iv) monitoring and supervising contractors; and (v) community development.

##### **B. Community Water Organizations**

###### **1. Legal and institutional characteristics**

4.5 As mentioned, in order to be eligible for Programs funds communities must create an organization to prepare the project and participate in the project construction. Once the infrastructure is built, CWO's -made up of residents of the community who will be users or beneficiaries of the systems- will be legally incorporated as entities with their own bylaws. The legal arrangements for their incorporation are made by PIU and their establishment is a prerequisite to get a license from the OUR.

4.6 Under Jamaican Law, communities have the right to organize themselves as legal entities and to own the water systems. Under the Co-operative Societies Act of 1950, the Companies Act of 1965, the Friendly Societies Act of 1966 or the Industrial and Provident Act of 1903, the communities can find an appropriate legal form to suit their interest.

- 4.7 The functions of the CWO will be: (i) to represent the beneficiaries and users of the services; (ii) to participate in the development and execution of local sanitation Programs, (iii) to participate in contracting for construction and financing of the systems with MOWH and negotiating with community members regarding their commitments and contributions to the projects; and (iv) either administering the systems and monitoring to ensure correct use and operation thereof or contracting out the construction and operation and maintenance under a BO contract.

## **2. Financial features**

- 4.8 The rates for service are agreed between the MOWH and each CWO as part of the MOU for construction and financing of the systems. The MOU specifies that the rate must be sufficient to enable the sanitation board to cover all operating costs, and to maintain a reserve fund for repairs and replacement of systems. Once the systems are built and legally established, the CWO will present OUR a request for a service license and a request for a tariff.
- 4.9 With regard to accounting records, each CWO will be required to keep at least basic accounting books, which must be approved by the MOWH accountant. In the case of the largest consolidated CWO, complete financial statements audited by independent accountants may be required.

## **V. FEASIBILITY AND RISKS**

### **A. Technical feasibility**

- 5.1 The Program is considered feasible and justified from a technical standpoint because it responds to the need to address problems of public health caused by non-existence or inadequacy of systems for potable water supply. The systems to be constructed in the beneficiary communities have been designed in accordance with both the needs of these communities and their financial and administrative capabilities. The systems will consist of wells, pumps, reservoirs, house connections, and seepage pits and/or septic tanks for wastewater disposal. Other options include the connection to the existing network of NWC.
- 5.2 The suitability of these systems for the communities at which the Program is directed is supported by the project design, which follows the least cost principle. Specifically, designs of the project sample were drawn up for two concentrated rural communities and in both the cases, the projects were prepared in accordance with generally accepted engineering standards and principles. These designs represent alternatives that are low in cost and technically feasible and that have been tested under similar conditions elsewhere in the country.
- 5.3 The operation of the systems is extremely simple. In many cases, all that is required is the operation of an electrical pump and control of reservoir level. Nonetheless, the private sector participation and community development components included in the proposed Program will help ensure that the works, once constructed, are properly operated and maintained.

### **B. Economic feasibility**

- 5.4 The Program is economically feasible. It will be carried out as a global multiple-works program with one component: drinking water supply for small communities and individual sanitation solutions.
- 5.5 A simple cost-benefit analysis was carried out as the Program's economic evaluation, and it was concentrated on an indicative sample of water projects<sup>5</sup>. For those projects expected to be financed by the Program -but not included in the sample- a cost-efficiency analysis will be carried out as it is stipulated in the OR. Two types of benefits were considered in the analysis: (i) resource savings from replacement of previous sources; and (ii) the value of the net increase in water consumption. For consumers that are already connected to a system that will be improved with the Program, resources savings are considered for drought periods

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<sup>5</sup> Designs of the projects were based on demand projections. Growth population was projected using a growth rate statistics for each town. Consumption was estimated using WSC statistics (100 observations for each system) for rural towns similar to those that will finance the program (income, size, mean annual temperature, etc.). A mean value of 156 liters per capita per day was used.

when other sources have to be used to get water. In addition, benefits from incremental consumption due to availability were added.

- 5.6 Resources savings mainly come from: (i) expenditure from water bought to tankers which is sold at US\$10 per m<sup>3</sup>; (ii) time savings for fetching water from stand pipes and/or rivers and springs; and (iii) time and resources savings in transportation (mainly taxi) carrying water from stand pipes. Additionally, for water brought from springs and rivers it was found that alternative purification methods such as boiling water and time savings were used. This information was gathered using surveys to the population included in the sample (30 observations).
- 5.7 The increase in water consumption was valued calculating the area below the demand curve with and without project consumption. This demand curve was determined assuming a linear demand curve with a price elasticity that reflects consumption with and without the project. Baseline information used to calculate the benefits were collected for each project by applying surveys to the future beneficiaries. A mean elasticity of -0.31 was estimated. The costs included in the analysis were: (i) incremental capital investment costs; (ii) incremental recurrent costs (operations, maintenance and depreciation); and (iii) community development costs (organization, training and hygiene education). All transfers including taxes and subsidies are excluded from the analysis.
- 5.8 A simple model was created in an electronic sheet. Two of the three systems analyzed were economically feasible. These two systems will serve 5 independent communities. The main results of the economic analysis of the sample are presented in Table 5.1.

**TABLE 5.1**  
**ECONOMIC FEASIBILITY OF THE SAMPLE**  
**RESULTS OF THE ECONOMIC COST-BENEFIT ANALYSIS OF THE SAMPLE**  
**(US\$ THOUSANDS)**

TOWN	POPULATION		INVESTMENT COST	COST PER CONNECTION	NET PRESENT VALUE	ECONOMIC IRR %
	TOTAL	NEW				
Gravel Hill	2,475	2,129	544	1,075	2,587	62
White Horses	7,547	6,641	2,168	1,369	1,061	18

- 5.9 According to the sample the mean cost per connection is 1,293 with a mean per capita cost of US\$308. This cost is higher than other rural projects in Latin America that normally range from \$150 to \$200. This cost is higher mainly due to: (i) Reliable sources of water are located far away (7 kilometers in the sample). (ii) Most of the materials, the more expensive, are imported. (iii) The level of service is high (house connection with 24 hrs. service). Nevertheless, these projects are economically feasible due to the high willingness to pay of the

population due to the distance and high cost for fetching water (US\$5 to US\$10 per m<sup>3</sup>).

- 5.10 From the analysis it was determined that projects with a unit cost larger than US\$1,680 per connection (US\$400 per capita) are not economically feasible. This value will be used to determine the economic feasibility of projects to be financed by the Program and is part of the OR.

**C. Impact on low income beneficiaries**

- 5.11 The Program can be classified as a Poverty Targeted Investment (PTI) according to the Geographic Classification Criteria of the Bank. This criteria states that a project can be classified as PTI when project benefits are targeted to areas identified as poor within each country. The identification criteria could be proxy income measures such as unsatisfied basic needs, below country-average social indicators, or other household characteristics that are strongly correlated with poverty.
- 5.12 The Program uses a Poverty Map developed by the PIOJ to target the investments. The Program can finance communities classified in the poorest quartile. The poverty map was developed using 4 indicators to classify a town. These indicators are percentage of population with primary education, level of unemployment, percentage of households with existing water closet and percentage of households with connections to pipe water. All parameters are correlated to poverty.
- 5.13 The annual mean income per capita of the four quartile is J\$23,941 (US\$532) that is lower than the poverty line set by the Bank which is J\$24,444 (US\$543). Therefore, this operation qualifies as a social equity-enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore, this operation qualifies as a PTI. The borrowing country will be using the 10 percentage points in additional financing.
- 5.14 The Program considers a 90% subsidy in the investment cost. Assuming that the household ability to pay of a monthly water bill is 3% of the family income or 10% of his annual income may be saved to pay for the investment cost, the PIOJ's Jamaica survey of living conditions establishes the mean per capita annual expenditure of the poorest quintile in J\$21,910 or J\$70,112 per household. This means that households served by the Program could save J\$7,011 for investment and J\$175 for a monthly water bill. During Project preparation, 12 potential beneficiary communities were analyzed in order to determine their ability to invest and pay for water. All of these beneficiary communities demonstrated a maximum of 10% capacity to invest. In the case of the Project sample, the community of "Gravel Hill" could pay up to 14.5% of the investment and in "White Horses" 11.3%, which demonstrates that the proposed subsidy of 90% of the investment cost is justifiable.

**TABLE 5.2**  
**SAMPLE PROJECTS – ABILITY AND WILLINGNESS TO PAY FOR WATER**

PROJECT	COST PER HOUSEHOLD	ABILITY TO INVEST	ABILITY TO CONSUME
Gravel Hill	48,375	7,011	175
White Horse	61,605	7,011	175

**D. Institutional feasibility**

- 5.15 The predominant institutional scheme that has been used up to now in Jamaica to extend services to rural areas consists of the extension of the NWC network to these areas. However, as it was mentioned before there is a strong constraint, which is becoming more and more apparent as the country seeks to extend services to rural areas. NWC's physical and financial capacity to provide services to these areas is weak. As a result the GoJ decided to embark in a new initiative aiming at providing assistance to community organizations in order to attain its policy targets. However it is clear that the MOWH does not have the capacity or the experience to implement such an innovative initiative. For this reason, the Program will introduce the following innovative elements in the traditional institutional scheme: (i) participation by a Program consulting firms in the execution of the Program to assist the MOWH in preparing the projects and forming Community Water Organizations; (ii) increase the responsibility of construction firms during the construction of the systems by expanding that capacity to the operation and maintenance of the projects in the form of BO contracts.
- 5.16 MOWH will continue to use CECL as the engineering firm to design schemes and final projects. This is a regular activity of CECL with major government agencies, including the MOWH. CECL's capacity to prepare project's engineering designs was confirmed during project preparation. However, the MOWH will be supported by the PCF's in executing the Program, with the latter taking on a large proportion of the operational tasks of Program execution, although final responsibility for the Program and for dealing with the Bank will rest with MOWH. In particular, the PCF's will serve as an intermediary in gaining access for communities to the Program and will design projects, support MOWH in the bidding process for construction works, and supervise contractors. In practice, the PCF's will function as an executing unit that will work for MOWH in carrying out the Program and cease to exist once the Program is completed. The PCF's will be selected by means of competitive bidding, which will ensure that the selected firms have the necessary technical capacity to execute the Program.



- 5.17 With regard to the construction of systems the Program proposes that responsibility for supporting the community in laying lines or helping in the systems' construction be delegated to the construction firm in charge of building the systems. The construction companies will also take responsibility for the operation and maintenance of the system after construction is completed.
- 5.18 If systems are not taken over by the private sector, they will be turned over to the CWO, being responsible for their operation and maintenance, as well as the management of services, with support from MOWH. However, MOWH's physical capacity to assist CWO is limited, and the situation will become more difficult as the number of CWO increases and the new CWO are located at greater geographic distances from Kingston. To overcome this limitation, the Program will support MOWH in providing this support with the assistance of specialized consultants.
- 5.19 Finally, the Program will introduce the participation of the private sector or the NWC as an option available to CWO that wish to delegate the operation and maintenance of their systems and the administration of services either to the same companies that constructed the systems, or to NWC. The private companies would be chosen by means of bidding; in order to be included, companies must meet minimum requirements for technical and managerial capacity. During project preparation, local firms interested in participating in the Program were consulted. They expressed their interest in carrying responsibilities as those contemplated in the Program if adequate levels of returns of the investment are feasible.
- 5.20 These improvements in the traditional institutional scheme are expected to help surmount the limitations in capacity for execution described above. In addition, there will be an appropriate distribution of activities among the various entities involved, with a clear definition of obligations and responsibilities included in the OR for the Program, the draft versions of which have already been prepared and agreed with the MOWH.
- 5.21 The timetable for Program execution has been developed bearing in mind the demand from the communities for access to the Program, the time required for preparation and processing of applications and projects, the time required to process bids, and the characteristics of the works. The four-year period planned for the execution of the Program is considered adequate.

**E. Financial feasibility**

- 5.22 80% of the resources for execution of the Program will come from the Bank financing; the GoJ counterpart and the communities will constitute the remainder 20% (6% communities and 14% the GoJ) (see Table 2.1).
- 5.23 Given this flow of funds, the analysis of the Program's financial feasibility centered on the capacity of the beneficiary communities to make the required

contributions and generate enough resources during operation of the systems to ensure the financial sustainability of the services. Regarding the contributions from beneficiaries, in the case of potable water services, according to the studies conducted and the information available on the systems already constructed, the amount to be contributed is estimated at around of 4% average monthly family income, and is financially feasible.

- 5.24 As for the sustainability of services, at the time the MOU is signed between MOWH and the CWO, the rates applicable to the system will always be calculated. These rates, which take into account both the costs of operating the systems and depreciation of short life assets (pumps and electromechanical equipment), were analyzed in the light of the payment capacity of users. Verification that the rates to be charged by the CWO are sufficient to cover all costs of the services will be a necessary condition for project eligibility.

**F. Socio-environmental feasibility**

- 5.25 Given the type of works included in the Program, the potential negative environmental impacts can generally be expected to be small in magnitude, localized, and confined mainly to the construction phase. To address these impacts, relatively simple and easily applied mitigation measures are available and will be considered in the environmental annex of the OR.
- 5.26 The preparatory phase included a report on the environmental feasibility of the Program, which analyzed the applicable legal and institutional framework relating to environmental matters and determined what permits and licenses would be necessary for the execution of the Program. It also examined the results and recommendations of the socio-environmental analysis of the Program components. This report was prepared on the basis of the typical works for which financing is to be provided and which were actually carried out in the sample of communities that served as the basis for the design of the Program. This report led to the development guidelines for environmental management of the Program, which are included in an annex to the OR.
- 5.27 In the social sphere, the Program provides for participatory action by communities in order to make the CWO more effective and make the systems sustainable in the long run. The Program's participatory approach will foster the development of local accountability, skills, and capacity. It is considered a priority to promote community participation with a gender perspective, given the importance of women's role in activities that have a direct bearing on the well being of their families, such as proper use of potable water supply and sanitation works.
- 5.28 The Program will contemplate an active participation of the community that it is expected will contribute to the technical, economic, and socio-environmental sustainability of the works, and will generate favorable conditions for the maintenance of community organization and commitment. The existence of

sustainable systems of water supply and sanitation will convey greater social benefits for the poorest segments of the population.

## **G. Benefits**

- 5.29 The Program is aimed at extending the coverage of potable water to rural communities that currently lack them. It also provides for the construction of individual wastewater disposal systems when necessary. The scope of the Program is not limited to the construction of systems, however; it also includes organization of the beneficiary communities to ensure correct operation of the system and rational use of the water and the participation of the private sector.
- 5.30 The Program is expected to have a positive impact, since increased access to potable water and sewerage services will improve levels of health and quality of life for the beneficiary population. In particular, the Program will benefit the country's poorest populations, which are distributed across a wide geographic area. Another group that is expected to benefit in particular from the Program is women, who are generally responsible for transporting water and caring for the health of their families. The Program will promote the active involvement of woman in Program activities and, especially, their participation on the CWO.

## **H. Risks**

- 5.31 There are four main risks to the Program's success: (i) **Risk:** the Ministry of Water and Housing's (MOWH) capacity to channel Program's funds to the CWO. **Mitigation:** MOWH will receive support from private firms that will assist the Project Implementation Unit (PIU) and an institutional component to strengthen the MOWH is included (see paragraph 2.7); (ii) **Risk:** sustainability of the systems after they are constructed and turned over to the CWO. **Mitigation:** community participation and the rates to be applied by the CWO will be sufficient to cover all the operation and maintenance costs of the services. The Office of Utilities Regulation (OUR) will authorize tariffs for each community (see paragraph 3.17); (iii) **Risk:** lack of adequate interest from local entrepreneurs in the BO contracts. **Mitigation:** the Project Implementation Unit (PIU) will promote the Program among the private sector and will carry out a financial feasibility analysis before the call for bids, guaranteeing an adequate rate of return; and (iv) **Risk:** Community capacity to sustain the operation of water supply systems given the lack of demonstrated success in this area. **Mitigation:** the Program considers a component of community development and assistance to the MOWH in Community Development training.

**RURAL WATER PROGRAM  
(JA-0113)  
Logical Framework**

ARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
IVE tribute to improve the sanitary health conditions of poor rural unities in Jamaica.			
E borne diseases reduced by unity-based sanitation ns.	<p>1.1 The incidence of diarrhea in children ages 5 or less in the beneficiary communities included in the project declines at the end of project execution.</p> <p>1.2 The operation and maintenance of water and sanitation systems is financed 10% by the beneficiary communities by the end of project execution.</p>	<p>1.1 Special tabulations for the beneficiary communities to be provided annually by the Ministry of Health.</p> <p>2.1 Copies of semi-annual financial reports for each water and sanitation system, to be provided by MOWH.</p>	<p>1.1 Other factors that influ health conditions of the (for example, lack of sol collection) will not wor</p>
ONENTS age of drinking water supply es and individual sanitation ons extended to poor rural unities.	<p>1.1 By the end of the Project the drinking water supply and individual sanitation systems constructed in communities are serving 25,000 beneficiaries.</p>	<p>1.1 Coverage records for the benefited communities.</p>	<p>1.1 The program will gener interest of the commun which it is directed; the communities will meet for participation in the p the projects submitted the established eligibility requirements; the syste properly operated and</p>

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
r and sanitation service is ically and financially nable.	<p>2.1 The systems are continuing to function normally five years after construction is completed.</p> <p>2.2 Financial results shows that each independent system is at least break-even</p>	<p>2.1 Annual reports on operation and maintenance prepared by MOWH.</p>	<p>2.1 The program will generate interest of the communities which it is directed; the communities will meet the requirements for participation in the projects submitted the established eligibility requirements; the system properly operated and</p>
e sector operators enter the am to build and operate water ns.	<p>3.1 By the end of the project a total of 6 "Build-Operate" contracts signed with private operators:</p> <ul style="list-style-type: none"> <li>- 2 contracts (second year)</li> <li>- 2 contracts (third year)</li> <li>- 2 contracts (fourth year)</li> </ul>	<p>3.1 Contracts signed.</p>	<p>3.1 The program provides an economic incentive for sector participation.</p>
o strengthen the Ministry of r and Housing is implemented.	<p>4.1 The second phase of the Program is completed by the end of the Program.</p> <p>Training of MOWH staff is completed</p>	<p>4.1 Document of a second phase of the program.</p>	
TIES			<p>1.1 Bidding processes for the will be carried out within the expected timeframe</p> <p>1.2 Counterpart funding is according to the schedule</p>

**RURAL WATER PROGRAM  
(JA-0113)  
BIDDING SCHEDULE - TENTATIVE PROCUREMENT PLAN**

PRINCIPAL PROCUREMENT	FINANCING BANK %	METHOD	PREQUALIFICATIONS	AMOUNT (US\$ THOUSANDS)	PUBLICATION (HALF OF)
<b>Water and Sanitation Schemes</b>					
1	80	ICB	No	2,500	11/02
2	80	ICB	No	2,500	11/03
3	80	ICB	No	2,650	11/04
<b>Consulting Services</b>					
Community Participation (3 Lots)	90	ICB	Yes	1,720	11/02 and
Works Supervision (3 Lots)	60	LB	Yes	450	11/02 and
Technical Strengthening of MOWH	100	ICB	Yes	350	11/02

International competitive bidding  
Local bidding

bidding regulations:

US\$10,000, contracts may be awarded without tenders.

US\$10,000 and less than US\$50,000, contracts may be awarded without tenders, but written quotations shall be obtained.

US\$50,000, tenders must be invited in the local press.

PROPOSED RESOLUTION

JAMAICA. LOAN \_\_\_\_/OC-JA TO THE  
GOVERNMENT OF JAMAICA  
(Rural Water Program)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Government of Jamaica, as Borrower, for the purpose of granting it a financing to cooperate in the execution of a rural water program. Such financing will be for an amount of up to ten million dollars of the United States of America (US\$10,000,000) from the Single Currency Facility of the Ordinary Capital resources of the Bank, and will be subject to the "Special Contractual Conditions" and the "Financial Terms and Conditions" of the Executive Summary of the Loan Proposal.